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THE MARKET BASKET

by

Bureau of Home Economics, U. S. Department of Agriculture

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BUDGETING FOOD MONEY FOR FOOD VALUE

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Getting full value for the money expended for food, says the Bureau of Home Economics of the U. S. Department of Agriculture, is not only a matter of getting good quality and full measure. It is very definitely a matter of selecting foods for their nutritive value and the particular contributions they make to a balanced diet. The best way to do this, the Bureau suggests, is to draw up a food budget, based on a diet, balanced for nutritive values, and then try to buy accordingly. Budget-making helps to keep within the family income, and also to guard the family health by providing the necessary variety of foods for well-planned meals.

A food budget, however, like any other budget, is very much a family affair suited to the family for which it is made and probably no other. The housekeeper

must plan it according to the make-up of her family, their habits, and their tastes, as well as their income. Are there children, and if so how many and how old? Do all members of the family eat all their meals at home? Do the children get hot lunches at school? Are there many and frequent guests at the family table, and how much other entertaining is done in this home? And last, but by no means least important, what likes and dislikes must be allowed for?

With due allowance for such points as these, the housekeeper may find it useful to apply the suggestion of the Bureau of Home Economics that she divide her food money in five portions, and spend it for five different groups of foods. For example, if the family consists of two adults and two children about 8 and 10 years old, and the amount of food money available is $12 or $13 a week, it would be well to divide the food dollar like this:

Milk and cheese -- one-fourth or more
Vegetables and fruits --one-fourth or more
Meats, poultry, fish and eggs -- about one-sixth
Bread and cereals -- about one-eighth
Fats, sugar, and accessories -- about one-sixth

Within each of these five groups of foods, there will be, of course, a good many alternatives and in some cases choices among food products of similar food value. In other cases selection must be wisely made in order to be sure about food value. But, for a balanced diet, none of the groups may be omitted, and no group is interchangeable with any other group.

To consider the possibilities group by group:

MILK AND CHEESE. For those who do not drink milk, this important food may be used in soups, sauces, puddings, or in the form of cheese. Evaporated and dried milk are practically as nutritious as fresh milk, and 5 ounces of cheddar cheese is about equal to a quart of whole milk. For the family above, a fourth of the food money for milk and cheese allows a quart of milk daily for each child, a pint for each adult.

are plentiful. Until the fresh peaches, apricots, plums, pears and pineapple, or the berries and grapes are in season again, there are canned fruits of all kinds, and there are also the dried fruits with their more concentrated food values--prunes, dates, figs, raisins, and currants, dried peaches and dried apricots. The fruits share, with vegetables, one fourth or more of the food money, which would provide for at least one serving of fruit every day.

MEATS, POULTRY, EGGS AND FISH. Muscle meats, whatever the kind or cut, have about the same food values. Liver, kidneys, and other organs of meat animals are still more nutritions, and so are eggs and some kinds of fish. Generally speaking, however, the foods in this group fill much the same place in the diet. A sixth of the food money is allotted to them, and is expected to provide meat 5 times a week, or everyday if the meat is sometimes combined with cereal in a meat loaf or croquettes, for example, or in a stew with vegetables. The allowance for this item should also provide eggs two or three times a week for the adults in the family, and four or five times for young children, with a few eggs besides for use in cooking.

BREAD AND CEREALS. That means flour, corn meal, rice, macaroni, spaghetti, and various breakfast cereals, as well as bread, crackers, and other bakery goods. It is a good thing to use some whole-grain cereals, to make the most of the food values of the grain. An eighth of the food money will provide a breakfast cereal every day and bread at every meal.

FATS AND SUGARS are grouped together because they are all concentrated energy foods. The fats include not only butter, margarines, lard, or vegetable shortenings, but salt pork and bacon. With sugars are classed sirups and molasses, also jellies, jams, and honey.

ACCESSORIES include such items as coffee, tea, cocoa, baking powder, soda, vinegar, salt, spices, etc.--budgeted, however, with the fats and sugars, to which are allotted one sixth of the food money for a moderate cost diet.

With a budget like this, the housekeeper should be able to serve desserts once or twice a day, especially if she uses fruit desserts sometimes.

The main point of this food budget is its variety at moderate cost. Human beings require energy foods, body building foods, and health-protective foods, and the diet pattern suggested here supplies all these.

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THE MARKET BASKET

by

Bureau of Home Economics, U. S. Department of Agriculture

THE MEANING OF CALORIES

"Counting the calories" is one way to tell whether we are eating enough, too much, or too little. For the average individual, however, counting calories is not very practical, and as a matter of fact, with a varied diet, it is probably not important so long as one's weight remains about normal for height and age. It may be important, however, for people who must learn to follow a special diet of some kind--a reducing diet, a fattening diet, or a diabetic diet, for example. And to have a general idea of calorie values helps the meal-planner to provide a balanced diet for the family, says the Bureau of Home Economics of the U. S. Department of Agriculture.

So what are calories? What does it mean when the nutritionist says that a moderately active man needs about 3,000 calories per day, and a moderately active woman about 2,200 calories?

Calories are units of measure, the Bureau explains. Applied to food they measure its value as fuel for the human body. A slice of bread, for example, yields so many calories of fuel value, or energy. A serving of meat, of vegetables, fruit, milk, butter, sugar, each yield so many calories--and the count of the calories in all the foods that go to make up three meals a day shows whether those meals furnish enough energy or fuel.

Fuel, however, is only one of the essentials. The body must have energy to keep it alive and active, and it gets this energy from food much as the combustion engine burns fuel to produce the force that makes the engine go. The average man of moderately active occupation uses about 3,000 calories of energy each day, the average moderately active woman uses about 2,200 calories. Therefore they need fuel enough to furnish those calories, and they get it in their food.

Food serves as fuel because it contains substances the body can burn. Those substances are carbohydrates, fats, and proteins. All foods contain one or more of these substances, therefore all foods have some fuel value, but some have more than others because they contain so much more fuel substance. These energy foods, as they are called, include the cereals and sugars, which are richest in carbohydrates; and butter and the margarines, lard and the vegetable oils, which are concentrated fats. Meat, fish, eggs and cheese, which are the chief protein foods and have various other food values, are also valuable for fuel.

The vegetables and fruits, for the most part, come lower in fuel value, although potatoes have a high-calorie rating because of the starch they contain. Well up in the list come beans and peas, especially soybeans. All of these are rich in carbohydrates, fat, and proteins. Ripe bananas are rich in sugar; avocadoes are usually rich in fat.

On the other hand, foods that are watery and fibrous, like the greens, cabbage, broccoli, celery, okra, or tomatoes, cucumbers, sauerkraut, rhubarb, summer squash, and various other succulent vegetables, are low in fuel value. Most of the fruits run a little higher than most vegetables because the fruits contain more sugar.

A count of the calories, however, tells by no means all the requirements of good diet. The human body needs food for three main purposes -- (1) to supply the energy that keeps it alive and active; (2) to build, maintain and repair the body structure of bone, muscle and blood; and (3) to keep the whole organism in good health and running order. Nutritionists say, therefore, don't think only of calories and energy foods, but also of the body-building and health-protective foods, many of which are low in calories.

For example, a breakfast of cereal with milk or cream and sugar, bread, butter, eggs or meat, coffee with cream and sugar, and maybe some jam or marmalade, is a high-calorie meal. In order not to pile up the carbohydrates, fats, and proteins, without leaving room for the minerals and vitamins that are not abundant in many of the high-calorie foods, lunch and dinner should include greens, cabbage, broccoli or cauliflower, or a succulent vegetables like tomatoes, and a juicy fruit. These would furnish minerals and vitamins to supplement the carbohydrates if bread and potatoes or sweetpotatoes, the fat and proteins of meats, the fat of gravies and salad dressings, and the sugar and fat of desserts.

In other words, in a meal with bread and butter, meat and potatoes, milk or cheese, the energy foods are fully provided, and the rest of the menu should be chosen for other kinds of food value.

When it comes to selecting energy foods, here are some points to remember:

The different grains -- wheat, oats, corn, rye -- are about equally rich in carbohydrate and practically equal in energy value. A serving of oatmeal yields about the same number of calories as the same amount of corn meal mush, or cooked whole wheat, or rice, or any of the cooked breakfast cereals, white or dark. No one cereal product can be superior to another in energy value, because the source of the calories -- carbohydrate -- is the same. Whole wheat bread yields the same calorie value as white bread in slices of the same size.

White sugar is pure carbohydrate, and its energy value is about 50 calories to a scant tablespoonful. Butter, margarine, lard and the vegetable fats or oils yield about the same number of calories each - 100 per scant tablespoonful.

Milk furnishes energy value in the sugar, fat and protein it contains - about 333 calories to the pint of whole milk. Cream is almost entirely milk fat and water, its calorie value varying with its richness - i.e., the concentration of the fat. Skim milk has less energy value, because it has less fat. In a pint of skim milk the energy value amounts to about 175 calories. Cheese is a concentration of fat and protein, therefore high in energy value, a 1 1/8 cube of cheddar cheese running to about 100 calories.

The energy value of meat comes from fat and protein, and the calorie value of a serving of meat will vary according to the amount of fat and the dryness of the piece of meat.

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THE MARKET BASKET

by

Bureau of Home Economics, U. S. Department of Agriculture

BODY BUILDING FOODS -- PROTEIN

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Food furnishes the materials of which the human body is made, as well as the energy that keeps it alive and active. For body building materials, however, just as for energy, some foods are more important than others, and nutritionists distinguish some as "building foods", just as they call others "energy foods". The building foods, explains the Bureau of Home Economics of the U. S. Department of Agriculture, are those rich in substances that go to make muscles, bones, and other tissues of the body. For muscle building, that means protein in particular, and the foods most important for their protein are milk, cheese, meat, fish, poultry, and eggs, also nuts, peanuts, and soybeans. Nearly all foods contain some protein. It varies, however, in quantity and in quality, or "efficiency".

And what is protein? The word is from a Greek verb meaning "to be first". Nearly a hundred years ago, writes one of the authorities on nutrition, a scientist gave the name protein to what he believed to be the main substance of the body. The plural form "proteins", has come to mean a large number of related chemical compounds which are essential to the formation of all plant and animal tissues.

Plants manufacture their protein from materials they get from the soil and air. Animals must get theirs, more or less ready-made, in their food. Chemically, proteins are composed of substances called amino acids, which always contain nitrogen, in addition to carbon, hydrogen, and oxygen, which are the elements occurring in carbohydrates and fats. There are 18 or more amino acids, and they form different combinations, or compounds, each of which is called a protein.

There are so many combinations of amino acids, so many proteins, that no one food contains them all, nor does the body need to get them all in its food. But some of the amino acids are essential, and when they are present in good proportions, the protein is said to be "efficient", or high quality protein. In foods where only some of the essential amino acids are present, or are there in very small quantities, the protein is not of good quality, or is "inefficient"; i. e., inadequate for the body needs.

Milk, cheese, meats, fish, poultry and eggs are rich in proteins containing all the essential amino acids. Theirs is first quality, "efficient" protein.

Nuts and the bean family (legumes) are also rich in protein, but of varying quality and usefulness. Nuts are rich in good protein, but they are also very rich in fat. For this reason it is hard to use nuts enough to meet the protein requirement without getting more fat in the diet than is desirable. Peanuts and soybeans also contain protein of good quality. In the common beans and peas, the percentage of protein is high, but of a quality that needs reinforcement from other foods -- some meat, for example, as in chili con carne, or a glass of milk with the meal.

All the other vegetables, the grains and the fruits contain protein, but for the most part it is not of high quality. In the leafy vegetables the protein quality is good, but there is too little protein to count very much.

Almost any of the grains, with milk, furnish a good protein combination -- oatmeal and milk, for example, as a breakfast food; or whole-wheat chowder, or corn chowder. The same is true of macaroni and cheese, or vegetables scalloped in milk or cheese sauce.

Milk, in fact, contains more than enough of the amino acids which are lacking in proteins from most plant sources, and is a good supplement to any cereal or vegetable.

But how does all this work out when it comes to planning meals? Protein is absolutely necessary to life, and it is a substance that cannot be stored in the body -- as fat, for instance, is stored. Children must have protein to build their bodies. Adults and children alike must have it to make up for the wear and tear upon bodies already built. But too much protein food is not a good thing, because any more than enough for actual body needs must be disposed of somehow, and this excess may give trouble. So the amount of protein we eat -- our "protein intake" -- is a matter of considerable importance.

Fortunately, the margin between enough and too much protein is fairly wide, and need not restrict most people seriously. Much depends upon habits of life. People who lead active lives out of doors can use more protein than less active people who live chiefly indoors. Something depends upon the size of the individual, too, for big bodies have more muscle, bone and blood to keep in repair. Children, however, need proportionately more protein than adults, because children need it for growth. That is one reason why nutritionists would have all growing children use a quart of milk a day. Milk is a building food for several reasons, one being the protein it contains, which supplements or makes efficient the proteins from the child's other food.

For the average adult, nutritionists in the Bureau of Home Economics say that one or two average servings of protein-rich foods a day is ordinarily enough, not counting milk. With an egg for breakfast, say, and meat for dinner, plus the proteins from bread, cereals, vegetables and fruits, the day's supply of protein is ample. Without meat or fish or eggs or cheese, other protein foods are needed -- for example, a nut or peanut loaf, or soybeans, along with more milk and vegetables, of different kinds.

Good sources of protein are such "made dishes" as chowders, because they are made either of fish or sea food, vegetables and milk; meat-and-vegetable stews, meat loaves, shepherd's pie, or any other meat-and-breadstuff or meat-and-vegetable mixture; codfish with spaghetti and tomatoes; creamed finnan haddie or other creamed fish or sea food; cheese toast; corn, tomatoes and cheese on toast; Welsh rabbit, tomato rabbit, cheese soufflé; macaroni and cheese, scalloped vegetables in cheese sauce, or any other cheese dish; corn pudding, with its milk and eggs as well as corn; peanut loaf, scalloped onions-and-peanuts, or any mixture with peanuts or peanut butter; chili con-carne, and soybeans, green or dried.

Other considerable sources of protein are muffins or other batterbreads, cakes, custards and other desserts that are made with eggs and milk. Nuts, of course, add still more protein to a bread or cake or dessert. Gelatin furnishes protein, but it is of poor quality, and as ordinarily used there is very little of it.

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THE MARKET BASKET
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MINERALS AS BODY BUILDERS

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Minerals, as the word is commonly understood, do not seem much like food. Calcium in the form of marble, phosphorus in the phosphate fertilizers, or iron hard and strong enough to bridge a river, do not appeal to the appetite, to say the least. Calcium, phosphorus, and iron, however, and some other mineral elements are indispensable building materials for the human body. Calcium and phosphorus are used chiefly to make bones and teeth. Iron is needed especially in the blood. The body must get these materials in its food and a shortage of any one of them very soon causes trouble in the body.

But there need not be a shortage, says the Bureau of Home Economics of the U. S. Department of Agriculture. We can get the mineral elements we need by choosing the foods that provide them in the form of "mineral salts", or other digestible compounds. Plants use mineral substances, which they take direct from the soil. We eat plants, we also eat animals that have eaten plants, and in the plant tissues which compose vegetables and fruits, and in the animal tissues that furnish meats, poultry and fish, or in animal products in the form of milk and eggs, we get those same minerals in forms which we can assimilate.

Practically, then, our problem is one of selecting foods for their mineral value, just as we select for energy, protein, and other values. And here, once more, foods vary. Nearly all foods contain at least a trace of each important mineral, some are rich in one or more of the minerals. The food most useful as a source of calcium -- milk -- though rich also in phosphorus, is poor in iron. And eggs, rich in phosphorus and iron, carry practically all their calcium in the shell. And so on through many variations and grades in value.

The body requires more of some minerals than others. It requires a lot of calcium, which is not abundant in many foods, and a lot of phosphorus which is plentiful in many foods. It requires only a little iron, but that little is hard to acquire because even the foods called "iron-rich" contain very little indeed.

Nutritionists simplify the problem somewhat when they tell us that if we make sure of the calcium and iron, the phosphorus will take care of itself, because it comes in so many foods, including those rich in calcium or iron.

Calcium, then, needs special attention. Some nutritionists believe that in American diets, there is very likely to be a shortage of this particular element--partly because the body needs so much. The bones and teeth, where calcium is so largely needed, constitute a big part of the body bulk, and calcium is unevenly distributed in the common foods.

Children particularly need plenty of calcium. A shortage of calcium or phosphorus in children's food means stunted growth. The bones either do not develop, or they are weak and fragile and the child may develop rickets - a wholly preventable disease which leaves crooked bones or other deformities for life.

As both these minerals are plentifully supplied by milk more easily and economically than by any other food, nutritionists recommend plenty of milk in the children's diet--a quart a day is best, they say, to make good strong, straight bones. Adults need calcium to keep bones and teeth in repair and it is hard for anybody to get enough calcium without using milk in some form--either to drink, or in soups, chowders, cheese, or sauces. Vitamin D is necessary, too, for bone-building.

So milk is at the top of the list of foods rich in calcium--and this means skim milk and buttermilk, as well as whole milk, fresh, evaporated, or dried, and it means cheese also. Then come the greens--beet tops, cabbage, cauliflower, chard, collards, dandelions, kale, mustard, and turnip tops. Some of the sirups, too, are good for their calcium--sorghum sirup, sugarcane sirup, and molasses.

Iron is not so easily supplied. There is no one food that can be depended upon to furnish the day's quota of iron. The best sources of iron among foods from animal sources are egg-yolks; meats, particularly liver, kidney, brain and heart, also lean muscle of beef, veal, pork lamb, and dark meat of poultry, oysters and shrimps. In the vegetable kingdom, the best foods for iron are the green leaves, particularly turnip and beet tops, dandelion and mustard greens, watercress, and spinach, also kale, and broccoli leaves; dried fruits, particularly apricots, peaches, currants and dates, also figs, prunes and raisins; whole-grain flours or cereals, particularly whole wheat, barley, rye and oats; molasses, sorghum sirup and sugarcane sirup; beans and peas of all kinds, fresh or dried; and nuts, particularly almonds and hazelnuts, also walnuts, pecans, and hickory nuts.

Each of these various types of food contains a little iron -- but it takes several iron-rich foods to furnish a day's supply, for there must be plenty of iron in the diet to make good red blood.

Phosphorus is found in many foods. Particularly rich in phosphorus are milk and cheese, eggs, meat, fish, oysters, lobster, shrimp, clams, beans and peas, whole grains, cornmeal, and some of the greens -- so many different kinds of foods that we are almost sure to get enough phosphorus.

Although most foods contain at least a trace of all the food minerals, foods rich in all three of the essential minerals here discussed are exceptional. Two sea foods, oysters and shrimps, are rich in all three-calcium, phosphorus, and iron. Milk is rich in both calcium and phosphorus, and so are clams and lobsters. As to calcium and iron together, only the greens and the sirups (molasses, sorghum sirup and sugarcane sirup) are rich in both these minerals. A good many foods are rich in phosphorus and iron, but this combination is less important because phosphorus is abundant in so many foods.

When it comes to planning meals, foods rich in bone and blood-building minerals are of course among the essentials, along with carbohydrate foods and fats for energy, and protein-rich foods for muscle building. For example, says the Bureau of Home Economics: A breakfast including dried apricots or peaches, cereal and milk, and whole-wheat toast provides a good supply of calcium, phosphorus, and iron. A lunch including an oyster milk-stew, or an egg salad with a glass of milk and gingerbread, would be rich in these minerals, as would also a dinner including a milk soup, lean meat or liver, and greens of some kind, or, if there is no meat, baked beans, brown bread, and greens or a green salad.

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